

EXHIBIT A: Comparative PSR Potency and Safety for Representative Trichothecenes

MOLECULE DESCRIPTION

ID 50
(ng/ml)

LD 50
(in mg/kg BW)

Human Lung Dose/Safety

Type A	Molecular Formula	Molec. Mass	Mit Pt (°C)	CAS Number
T-2 Toxin	C24 H34 O9	466	151	21259-20-1
DAS (Diacetoxysciperol)	C19 H26 O7	366	162	2270-40-8
NEOS (Neosolaniol)	C19 H26 O8	382	171	36519-25-2

HEP2 /HSV2	IV	IP
1.6	4.2	5.2
2.3	12	15
52		14.5

Lung Dose	LD 50	Times Safer
3X ID50 (in ng.)	(in ng.)	
5760	294000000	51,042
8280	840000000	101,449
187200	1015000000	5,422

Type B	C15 H20 O6	296	151	51481-10-8
DON (Deoxytrivalenol)	C15 H20 O7	312	222	23282-20-4
NIV (Nivalenol)	C17 H22 O8	354	91	23255-69-8

94	7.3	7.0
50		7.4
26	3.4	3.4

338400	4900000000	14,480
180000	511000000	2,839
93600	238000000	2,543

Type C	Crotoxin
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250

900000

Macrocyclic	C29 H36 O10	528	162
Satratoxin G	C29 H36 O9	532	198
Satratoxin H	C29 H40 O9	502	360
Roridin A			
Verrucaridin A			
Baccharinoid B-4			
Baccharinoid B-5			

1.5	1	1
1.4		
1	1.5	0.5
41		
9		

5400	700000000	13,889
5040	700000000	29,167
3600	1050000000	
147600		
32400		

Notes & Abbreviations:
Cell line origin: HEP2 = epidermoid carcinoma
Administration Route: IV = intravenous, IP = intraperitoneal
ID 50 for cells: concentration required for 50% protein synthesis inhibition in cultured human epidermoid cell lines - HSV protein synthesis inhibition model used
Administration Route: IV = intravenous, IP = intraperitoneal
LD 50 based on mouse models
Human Lung Dose/Safety: 3 times ID50 used for ~ complete protein synthesis restriction (PSR), 1200 grams = average human lung
LD50 based on avg. 70 KG human, IV LD 50 used when available, otherwise IP LD 50 used
Times safer = LD 50 in ng + 3X ID 50 lung dose in ng. (in animal models 5 X safer = no mortality)